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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/065,740

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Srikanth Akkaram

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08/21/2006

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EXAMINER

SHARON, AYAL I

ART UNIT

PAPER NUMBER

2123

DATE MAILED: 08/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/065,740

Applicant(s)

AKKARAM ET AL.

Examiner

Ayal I. Sharon

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 and 21-39 is/are pending in the application.
- 4a) Of the above claim(s) 30-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 and 21-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Introduction

1. Claims 1-19 and 21-39 of U.S. Application 10/065,740 are currently pending.
2. This action is final.

Election/Restrictions

3. Newly submitted claims 30-39 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

Independent claims 1, 21, and 28, and their dependent claims, are directed to an intended uses of mathematical algorithms, while the newly added independent claims 30 and 35, and their dependent claims, are directed to computer-based material development – without any reference whatsoever to mathematics.
4. Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 30-39 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. **Claims 1-19 and 21-29 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.**
7. The claims in the instant application are directed to an abstract idea. One may not patent every “substantial practical application” of an idea, law of nature or natural phenomena because such a patent “in practical effect be a patent on the [idea, law of nature or natural phenomena] itself.” Gottschalk v. Benson, 409 U.S. 63, 71-72, 175 USPQ 673, 676 (1972).
8. The instant claims also lack a concrete, useful, and tangible result.
9. The fundamental test for patent eligibility is to determine whether the claimed invention produces a “**useful, concrete and tangible result.**” See State Street Bank & Trust Co. v. Signature Financial Group Inc., 149 F. 3d 1368, 47 USPQ2d 1596 (Fed. Cir. 1998) and AT&T Corp. v. Excel Communications, Inc., 172 F.3d 1352, 50 USPQ2d 1447 (Fed. Cir. 1999). In these decisions, the court found that the claimed invention as a whole must accomplish a practical application. That is, it must produce a “useful, concrete and tangible result.”
10. See State Street, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02. (“[T]he transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces ‘a useful, concrete and tangible result’ – a final share price

momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades”).

11. See also AT&T, 172 F.3d at 1358, 50 USPQ2d at 1452 (Claims drawn to a long-distance telephone billing process containing mathematical algorithms were held patentable subject matter because the process used the algorithm to produce a useful, concrete, tangible result - a primary inter-exchange carrier ("PIC") indicator - without preempting other uses of the mathematical principle).
12. The Examiner respectfully submits that claimed invention does not recite a concrete, useful, tangible result. While the newly-amended independent claims 1, 21, and 28 recite the words “output[ing] the results in a tangible form”, the claims still lack a specific “concrete, useful, tangible result” similar those provided in State Street and in AT&T. The Applicants in the instant case are claiming an abstract idea.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

14. The prior art used for these rejections is as follows:

Art Unit: 2123

15. Lystad et al., U.S. PG-PUB 2005/0192783. ("Lystad").

16. The claim rejections are hereby summarized for Applicant's convenience. The detailed rejections follow.

17. Claims 1-19 and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Lystad.

18. In regards to Claim 1, Lystad teaches the following limitations (see especially paragraphs [0017] to [0018], and Fig.1):

1. A method for performing new material development, the method comprising: receiving a user simulation scenario from a user, wherein:

said user simulation scenario is in a-cyclic graph format and includes a plurality of material development modules represented as vertices including a starting module:

each said vertex includes data information including at least one input file source and at least one output file destination;

relationships between said modules are represented as edges; each said edge includes at least one of previous module and subsequent module; and

each said edge includes data flow information between said previous module and said subsequent module;

receiving a request to invoke said user simulation scenario, wherein said

request includes said input file source for said starting module; and

traversing said vertices along said edge in response to receiving said request and to said data flow information, wherein said traversing includes executing said modules associated with each said vertex beginning with said starting module in an order specified by said edges and said executing results in data being written to said output file destination for each said vertex.

19. In regards to Claim 2, Lystad teaches the following limitations (see especially paragraphs [0017] to [0020], and Fig.1):

2. The method of claim 1 further comprising creating said user simulation scenario, wherein said creating includes:

receiving said plurality of material development modules and said edges from

Art Unit: 2123

said user wherein said plurality of material development modules and said edges are selected from a library of available material development modules and associated edges;

verifying that said plurality of material development modules and said edges form a subset of a scenario library;

generating said user simulation scenario in response to said verifying; and confirming with said user that said user simulation scenario is correct in response to said generating.

20. In regards to Claim 3, Lystad teaches the following limitations (see especially paragraphs [0018] to [0020], and Fig.1):

3. The method of claim 2 wherein said scenario library includes said library of available material development modules and all possible relationships between said material development modules represented in a-cyclic graph format.

21. In regards to Claim 4, Lystad teaches the following limitations (see especially paragraphs [0018] to [0020], and Fig.1):

4. The method of claim 1 further comprising providing the results of said traversing to said user.

22. In regards to Claim 5, Lystad teaches the following limitations (see especially paragraphs [0018] to [0020], and Fig.1):

5. The method of claim 4 wherein said providing includes allowing said user to browse all or a subset of said data written to said output file destination for each said vertex and said input file source.

23. In regards to Claim 6, Lystad teaches the following limitations (see especially paragraphs [0018] to [0020], and Fig.1):

6. The method of claim 4 wherein said providing includes transmitting all or a subset of said data written to said output file destination for each said vertex and said input file source.

24. In regards to Claim 7, Lystad teaches the following limitations (see especially paragraphs [0018] to [0020], and Fig.1):

7. The method of claim 1 further comprising providing said user with access to a common materials development database that includes said data written to said output file destination for each said vertex and said input file source.

25. In regards to Claim 8, Lystad teaches the following limitations (see especially paragraphs [0018] to [0020], and Fig.1):

8. The method of claim 7 wherein said common materials development database includes material related data, design data and integration data.

26. In regards to Claim 9, Lystad teaches the following limitations (see especially paragraphs [0018] to [0020], and Fig.1):

9. The method of claim 7 wherein said common materials development database is in a relational database format.

27. In regards to Claim 10, Lystad teaches the following limitations (see especially paragraphs [0018] to [0020], and Fig.1):

10. The method of claim 7 wherein said common materials development database includes said data information.

28. In regards to Claims 11-14, Examiner finds these claims do not further limit the invention, because they are directed to intended users:

11. The method of claim 1 wherein said user is a designer.

12. The method of claim 1 wherein said user is a material developer.

13. The method of claim 1 wherein said user is a customer.

14. The method of claim 1 wherein said user is a supplier.

29. In regards to Claim 15, Lystad teaches the functionality of the following limitations (see especially paragraphs [0018] to [0020], and Fig.1):

15. The method of claim 1 wherein said material development modules include a process and producibility module.

30. In regards to Claim 16, Lystad teaches the following limitations (see especially paragraphs [0018] to [0020], and Fig.1):

16. The method of claim 1 wherein said material development modules include a material module.

31. In regards to Claim 17, Lystad teaches the following limitations (see especially paragraphs [0018] to [0020], and Fig.1):

17. The method of claim 1 wherein said material development modules include a property module.

32. In regards to Claim 18, Lystad teaches the following limitations (see especially paragraphs [0002] to [0031], and Fig.1):

18. The method of claim 1 wherein said material development modules include a cost and performance model.

33. In regards to Claim 19, Lystad teaches the following limitations (see especially paragraphs [0018] to [0020], and Fig.1):

19. The method of claim 1 wherein said material development modules include an error propagation model.

34. Independent Claim 28 is rejected on the same grounds as claim 1.

Response to Amendment

Re: Drawings

35. Applicants drawings filed 6/12/2006 have been accepted. The objections to the drawings have been withdrawn.

Re: Claim Rejections - 35 USC § 101

36. The amendments to claims 28 and 29 have overcome the 35 USC § 101 rejections of the claims based on the grounds of "software per se". These rejections have been withdrawn.

37. However, the amendments to independent claims 1, 21, and 29 do not overcome the 35 USC § 101 rejections of claims on the grounds of lack of a "concrete,

useful, tangible result.” The 35 USC § 101 rejections of claims 1-19 and 21-29, on this basis, still stand.

Re: Claim Rejections - 35 USC § 112

38. Claim 20 was cancelled by the Applicants. The rejection of the claim is now moot, and has been withdrawn.

Re: Claim Rejections - 35 USC § 102

39. Applicants arguments regarding the 35 USC § 102 rejections (see pp.12-16 in the amendment filed 6/12/2006) have been fully considered but they are not persuasive.

40. The Applicants argue (see p.14 of the amendment filed 6/12/2006) that the Lystad reference does not teach “a plurality of material development modules.” Examiner respectfully disagrees. Paragraph [0018] of the Lystad reference teaches that “One or more perimeter nodes 12a (not having any upstream nodes 12) may represent sources of materials such as raw materials, inventory, work-in-progress ...”

41. In their argument, the Applicants cite that the specification of the instant application, at paragraph [0018], that teaches the following regarding “materials modules” (emphasis added):

“Examples of materials modules 110 include software tools to perform the following functions: γ^1 precipitation, grain size, phase analysis, and grain growth modeling.

42. Examiner notes that the Applicants also cite in their argument the following irrelevant sections of paragraph [0018]. They are irrelevant because they are not directed to “materials modules”:

Property modules 112 can include modules to perform functions such as flow stress, low cycle fatigue (LCF), ultimate tensile strength (UTS), creep and tensile modeling.

Any cost and performance models 114 known in the art (e.g., COMPEAT from General Electric Company) can be utilized with an embodiment of the present invention. Additionally,

43. Examiner further notes that the section of paragraph [0018] that pertains to “materials modules” (see above) teaches that ““Examples of materials modules 110 include software tools”. Examiner notes that the specification does not expressly limit materials modules to software tools.

44. Examiner notes that paragraph [0018] of the instant application also teaches the following, which was not cited by the applicants in their argument:

The modules and models utilized in a particular implementation will vary based on specific user requirements. Therefore, the list above includes examples of the types of material development modules that can be utilized in an embodiment of the present invention and is not meant to include an exhaustive list nor is it required that every implementation includes all of the material development modules mentioned above.

45. Examiner finds that this is a very open-ended definition for a “materials module” in paragraph [0018] of the specification. the specification does not expressly limit materials modules to software tools. Examiner therefore interprets that Lystad’s teaching that “One or more perimeter nodes 12a may represent sources of materials such as raw materials” reads on the instant application’s teaching at

para. [0018] that "[T]he modules and models utilized in a particular implementation will vary based on specific user requirements."

46. Examiner is therefore maintaining the rejections.

Re: Claim Rejections - 35 USC § 103

47. The applicants unpersuasively argue that the Lystand reference does not expressly teach a "plurality of material development modules", as claimed in claims 21 and 29. Examiner respectfully disagrees.

48. Paragraph [0018] of the Lystad reference teaches that "One or more perimeter nodes 12a (not having any upstream nodes 12) may represent sources of materials such as raw materials, inventory, work-in-progress ..." Figure 1 of the Lystad reference clearly shows a plurality of such nodes.

49. However, Examiner finds that Applicants argument regarding the date of the Wang reference is persuasive. Examiner is therefore withdrawing the 35 USC § 103 rejections that rely on the Wang reference.

Conclusion

50. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

51. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory

Art Unit: 2123

action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ayal I. Sharon whose telephone number is (571) 272-3714. The examiner can normally be reached on Monday through Thursday, and the first Friday of a bi-week, 8:30 am – 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached at (571) 272-3753.

Any response to this office action should be faxed to (571) 273-8300, or mailed to:

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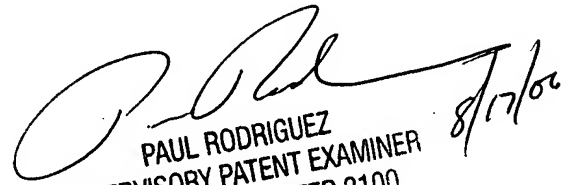
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Art Unit: 2123

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Tech Center 2100 Receptionist, whose telephone number is (571) 272-2100.

Ayal I. Sharon
Art Unit 2123
August 16, 2006


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